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LMMMR News

News from Conservation's Environmental Livestock Program

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Environmental Livestock Program
Headquarters Operations
Manitoba Conservation
1007 Century Street.
Winnipeg, MB R3H 0W4
Ph.: 204-945-8553
Fax: 204-948-2420

New Roles and Responsibilities

The environmental arm of Manitoba Conservation's Operations Division has a new organizational structure and some new faces.

Mike Gilbertson has assumed the role of Director of Environmental Services, with responsibilities for program development and coordination.

Don Labossiere is the Director of Environmental Operations, a new position, with responsibilities for program delivery at the regional level.

Al Beck will assist Mike and Don with their new responsibilities and assist with implementation of the Clean Environment Commission recommendations until his retirement

Congratulations

Mike Gilbertson is the new Director of Environmental Services with the Operations Division of Manitoba Conservation. Mike had been the Manager of the Environment Section with Environmental Services for the last two and a half years.

Before that he worked with the Canadian Council of Ministers of the Environment on the development of Canada-wide Standards and environmental quality guidelines. Mike has also worked in solid waste management at the municipal and regional level and on a range of environmental, parks, and resource management issues with Environment Canada and Parks Canada.

Mike has a Bachelor of Science in Forestry from the University of New Brunswick and a Master's of Environmental Studies from Dalhousie University.

Don Labossiere is the new Director of Environmental Operations with the Operations Division of Manitoba Conservation. Don had previously been the Assistant Regional Director of Western Region for the past three years.

Don has been involved with Environmental and Natural Resource Protection for 19 years, with program responsibilities including hazardous waste, dangerous goods, environmental programs and natural resource operations.

Asit Dey joined Manitoba Conservation as an Environmental Engineer in November 2008. Before joining Manitoba Conservation, Asit has worked as a Research Scientist with the Above Board Technologies, a structural straw board plant in Saskatchewan, and as a Livestock Environment Engineer with the Manitoba Agriculture, Food and Rural Initiatives. Asit has a Bachelor of Technology Degree in Agricultural Engineering with a specialization in Soil and Water Conservation Engineering from Calcutta, India., an M. Sc. in Agricultural Engineering with a specialization in Farm Machinery and Power from Indian Agricultural Research Institute in and a. Ph.D. in Biosystems Engineering from University of Manitoba. Asit has published many articles and has a Certification in Higher Education Teaching from the U of M.

Asit's major responsibility in Manitoba Conservation is a) to review, assess, and provide input on proposals, applications, assessments, engineering plans and associated documents and correspondence submitted pursuant to the LMMMR under *The Environment Act,* and b) to provide direction, professional engineering advice and technical support to staff responsible for inspection and compliance in the administration of the LMMMR, including the review of livestock operation applications, the development and drafting of permits for manure storage facilities, and the development and guidance of regional inspection and compliance monitoring programs

Kristian Stephens, P.Ag. has recently joined the Environmental Livestock Program as the Manure Management Planning Coordinator. He is responsible for the day to day administration of the MMP program. Before joining Manitoba Conservation, Kristian coordinated manure management plans for a private agricultural company. Prior to that, he helped rural Alberta landowners adopt various sustainable management practices through government extension work. Kristian has a B.Sc. in Agroecology and a M.Sc. in Soil Science from the University of Manitoba. Kristian looks forward to working with producers on their MMPs and may be contacted at 204-945-3078.

Diane Smith has recently joined the Environmental Livestock Program team as Soils Specialist. She is responsible for administration of the Manure Management Plans (MMPs) and coordination of the Compliance Monitoring Program (i.e. audits). She will serve as the department's specialist for soil and crop fertility matters related to environmentally sound manure application to agricultural land, as well as provide expert advice and educational support services to the Manitoba livestock industry, professional organizations, and Federal and Provincial institutions.

Prior to joining Manitoba Conservation, Diane was a Soil Survey Specialist with Manitoba Agriculture, Food and Rural Initiatives where she was involved in the ongoing provincial detailed soil survey program and responsible for the classification, interpretation, and mapping of soil profiles and landscape characteristics.

Diane holds a Diploma in Agriculture, a B.Sc in Agroecology, and a M.Sc. in Soil Science from the University of Manitoba. She is also a member of the Pedology Subcommittee of the Canadian Society of Soil Science.

Diane will be pleased to help and advise farmers to comply with the regulation. Diane can be contacted at (204) 945-3798.

Rajan Niraula recently joined Manitoba Conservation in November of 2008 as an Environmental Engineer in the Livestock Program. He brings over 15 years of experience in water and wastewater sectors as a water supply engineer, as well as an engineering consultant and drinking water/environment officer. He is experienced in inspection, assessment and investigation of drinking water and wastewater facilities in ensuring compliance with provincial regulations and operating licenses/permits.

Before joining Manitoba Conservation Rajan worked as a Consultant for design, assessment and rehabilitation of large and small municipal drinking water systems. He also worked as a consultant in developing Total Management Plan and 10 Year Capital Program for water and wastewater facilities in different Municipalities in Australia.

Under the World Bank and Asian Development Bank funded projects in Nepal, Rajan was an Engineer Coordinator for water related programs such as, demand management, leak detection, consumer awareness and community participation programs.

Rajan completed his Bachelor of Engineering in Civil Engineering from India as well as his Masters in Environmental Engineering from Griffith University in Australia.

Field Storage of Hen/Pullet Manure is not a Recommended Solution

by Sylvio Tessier, Head of Engineering, Manitoba Conservation

With the increasing popularity of cage systems incorporating conveyor belt manure removal, many hen and pullet producers have converted their manure management systems from liquid to semi-solid. Some producers are even trying to go all the way to solid manure handling by adding the optional manure drying system to use in conjunction with the belt conveyors. Of course, these changes all have an impact on the type of manure storage system one requires at the end of the conveyor.

The *Livestock Manure and Mortalities Management Regulation* MR 42/98 requires that any manure storage facility, regardless of the manure form, be constructed under the authority of a permit. A manure storage facility is any structure or site where manure is stored for more than 30 days. The construction permit application requires an engineered design and drawings, and the permit also requires that an engineer supervises the construction and, at the end of the work, certifies the construction was carried out in accordance with his/her design.

Manitoba Conservation's recent experience with these newer belt conveyor manure handling systems for hen/pullet manure suggests that manure from the basic conveyor belt system behaves like a semi-solid manure, at least for a few months of the year when stored into covered manure storage facilities. These manure storage facility designs are required to be watertight and storage capacity calculations assume that the manure will slump over time.

A new question arose with the advent of belt conveyors combined with a dryer system, an investment specifically designed to increase the odds that manure will be "solid" when exiting the barn: Do we need a manure storage facility for this "solid manure"? The short answer is "Yes", a manure storage facility is required.

What about field storage?

Under the Livestock Manure and Mortalities Management Regulation, field storage sites for solid livestock manure are not considered manure storage facilities. The requirements for field storage of solid manure are covered in section 7(1) through to 7(7) of the Regulation. To summarize, field storage of solid manure is allowed only if sufficient protection is provided against pollution of surface watercourses, groundwater and soil.

Field storage of "solid" hen/pullet manure is not a common practice in Manitoba or elsewhere in Canada. Manitoba Conservation has significant concerns with the fact that there is no bulking product added to the manure, and rainfall may easily wash off nutrients and organic matter off the hen/pullet manure piles if left open to the elements.

The regulatory requirements for field storage of solid manure were developed for field storage of cattle manure, dairy manure, poultry and even pig manure where ample amounts of straw are typically used as bedding or straw packs. The straw or any other dry bulking agent or bedding allows for reducing the manure's moisture content, provides some consistency to the manure, and allows manure piles and windrows to be relatively stable when stored outdoors under our climate.

The high nutrient strength of hen/pullet manure may also be a detriment to the productivity of the soil under field storage sites. If annual crops cannot readily establish on soil where hen/pullet manure was stored the previous season or previous year, then odds are that these nutrients will leach past the root zone and therefore impact the environment. For these reasons, Manitoba Conservation does not recommend field storage or hen/pullet manure, even if it is handled as a solid. For further information, please contact your local Manitoba Conservation office.

Manure Applicators Licence Message

Under *The Pesticides and Fertilizers Control Act* and Manure Regulation, all Commercial and Off-farm Manure Applicators need to hold a valid applicator licence issued by Manitoba Agriculture, Food and Rural Initiatives (MAFRI). The applicator's name, phone, and licence number must be indicated on Section E of your MMP. To be eligible for a licence, applicators must complete a home study course and exam created in partnership with Assiniboine Community College (ACC), industry and government departments. Two kinds of licences exist. The first is the custom manure applicators licence which is needed by anyone who transports and/or applies manure for payment. The second is the off-farm manure applicators licence which is needed by any person or group whose livestock operation must file a MMP and who applies at least a portion of the manure to land not owned or leased by their operation. To register for this course, please contact the ACC at 1-800-862-6307. For more information regarding manure applicator licencing, please contact MAFRI representative Tracey Cummer at (204) 745-5656 or Jeanette Gaultier at (204) 745-5648.

Source Water Monitoring

Section 6.1(3) of the *Livestock Manure and Mortalities Management Regulation* requires operations with 300 or greater animal units to submit to Manitoba Conservation the analysis results of their livestock's primary drinking water source. Manitoba Conservation must receive submissions by December 31 of each year; a reminder letter is sent annually in the fall for those operations that have yet to file for the year.

Information Bulletin 2004-01E (revised May 2009) describes how producers can meet the requirements of the Regulation. Prior to sampling, contact your laboratory to obtain special bottles that are required for analysis. The laboratory should also supply you with a sampling protocol addressing labeling, handling, and transporting of the samples. Please note that samples must be analyzed by a laboratory that has either CALA (Canadian Association of Laboratory Accreditation) or SCC (Standard Council of Canada) accreditation for each parameter. A copy of Information Bulletin 2004-01E is available on our website at http://www.gov.mb.ca/conservation/envprograms/livestock/

Don't Forget!

The "Reporting Form for Source Water Monitoring" found on the last page of Information Bulletin 2004-01E **and** a copy of the analytical results must be submitted to Manitoba Conservation no later than December 31 each year. Producers are responsible for the cost of collecting, submitting, analyzing, and reporting on the source water quality.

Results can be sent by mail or fax to: Livestock Source Water Sampling c/o Environmental Livestock Program (see front page for address/fax number).

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As Good as Anaerobic Digestion?

The Environment Amendment Act (Permanent Ban on building or Expanding Hog Facilities), identifies areas of the province where construction and expansion of pig operations is prohibited. The Act includes an exemption clause for"... the construction, expansion or modification of the storage facility to allow the manure to be subjected to

> **(i)** anaerobic digestion in a manner acceptable to the director, or
>
> **(ii)** another environmentally sound treatment that is similar to or better than anaerobic digestion and is acceptable to the director;

The Livestock Section has been receiving inquiries regarding what "is similar to or better than anaerobic digestion".

The short answer is that it is up to the proponent to demonstrate how it is "similar to or better". This process can be initiated by providing a written submission to the Director of Environmental Services, Manitoba Conservation detailing: how the treatment meets various criteria, management of the end products and specifications on the treatment technology.

The submission should discuss the following criteria:

- Is it an active mechanical process? What is the technology (provide specifications)?
- How will it result in separation of manure into solids and liquids: what are the end uses of the materials?
- How will it result in concentration of nutrients into components: where are the nutrient components to be used?
- How will the process result in best utilization of nutrients in accordance with crop requirements: where will the products be used, what are the target rates of application, what are the intended crops, and what are the soil types?
- How will the process result in economical long distance transport of nutrients that are surplus to crop needs in your area: where will the nutrients be used (are they exported outside of the moratorium areas)?

Although it is not mandatory, proponents may also comment on greenhouse gas emissions, water usage, chemical processes and water recycling as part of the submission.

REGULATORY PHOSPHORUS THRESHOLDS IN EFFECT

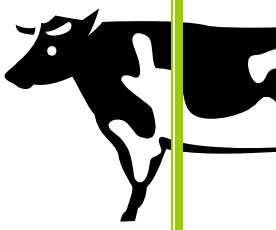
The LMMMR was amended November 8, 2006 and these phosphorus (P) thresholds are now in effect for all operations except those located in the Rural Municipalities of Hanover or La Broquerie or operations that had submitted a Phosphorus Extension Plan to Manitoba Conservation.

These P thresholds are triggered by certain soil test P concentrations, as shown in Table 1. However, it is important to remember that the existing nitrate nitrogen soil limits still apply.

Table 1. Soil test phosphorus thresholds for regulating manure application.

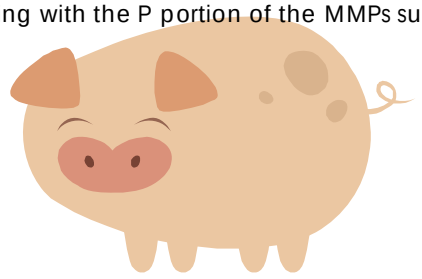
Soil Test P Threshold (Olsen P)	Manure P_2O_5 Application
Less than **60 ppm** P	**No restriction** on P_2O_5 application.
60 ppm P or more but less than **120 ppm** P	Apply P up to **2 times the crop removal** rate of P_2O_5
120 ppm P or more but less than **180 ppm** P	Apply P up to **1 times the crop removal** rate of P_2O_5
180 ppm P or greater	**No manure application** without written consent of the Director

Multi-Year Option



For fields with soil test P concentrations of 60 ppm or more but less than 180 ppm, there is a Multi-Year Option. This option is available for producers to apply manure at higher rates of application, up to 5 times crop removal of phosphate (P_2O_5). However, if this option is implemented, manure cannot be reapplied to that field until the number of years equal to the multi-year application rate has passed (up to 5 years).

If you have any questions or concerns, please call Bryce Wood at (204) 945-6423. After spending the past few years coordinating the manure management plan (MMP) program, he is now working with producers on compliance with the P thresholds. This also includes working with the P portion of the MMPs such as soil P levels and crop removal of phosphate.



MMP Audit Program

The 2009 Manure Management Plan (MMP) Audit will soon be underway. Approximately 10% of the nearly 500 MMPs filed for the 2009 crop year have been randomly selected for the audit, including several predetermined operations. Notification letters have already been sent to the selected operations.

Due to the wet weather and unfavourable sampling conditions, spring sampling was suspended. However, sampling will commence early summer, with our primary focus on pasture and hay fields. Once annual crops have been harvested, the remainder of the fields will be sampled until freeze up.

Selected fields will be soil sampled for nitrate-nitrogen levels at a 0-60 cm (0-24 in) depth as well as, an additional soil sample taken at a depth of 0-15 cm (0-6 in) for phosphorus concentrations. Fields are sampled using standard soil sampling protocols, taking a minimum of 15-20 samples per field, which are then composited and sent for analysis.

Legal sampling protocol is strictly followed when handling and submitting soil samples for analysis. Samples are sealed and kept on ice or placed in cold storage until delivered to the soil analysis laboratory.

Who are you going to call?

Manure management plan questions should be directed to Environmental Services. Matters regarding all other aspects of the *Livestock Manure and Mortalities Regulation* should be directed to the Regional contacts. For reporting a spill, emergency spreading, or any emergencies, call your Regional contact. After hours, use the emergency response number.

Emergency Response
944-4888

MMP
Environmental Services – Winnipeg
Ph: 945-3078 or 945-3789
Fax: 948-2420

Regional Contacts Manitoba Conservation

Central
Ph: 642-6095 Gimli
Ph: 945-5305 Winnipeg
Eastern
Ph: 346-6060 Steinbach
Ph: 345-1447 Lac Du Bonnet
Western
Ph: 726-6064 Brandon

This issue can be viewed online @ http://www.gov.mb.ca/conservation/envprograms/livestock/index.html